



IN THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the present application.

Listing of Claims:

Claim 1 (Currently Amended): A drive unit comprising:

a drive shaft;

a drive pulley attached to said drive shaft; and

a drive wire driven by said drive pulley so as to move a movable body,

wherein said drive pulley is formed by press working or rolling, said drive pulley including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable.

Claim 2 (Original): The drive unit as claimed in claim 1, wherein said drive pulley comprises a hole through which said drive wire is passed.

Claim 3 (Original): The drive unit as claimed in claim 1, wherein said drive pulley comprises an engaging part that engages and holds said drive wire.

Claim 4 (Original): The drive unit as claimed in claim 3, wherein said engaging part is a cutout.

Claim 5 (Original): The drive unit as claimed in claim 3, wherein said engaging part has a drawn shape.

Claim 6 (Original): The drive unit as claimed in claim 1, wherein said drive pulley comprises engaging means for engaging and holding said drive wire.

Claim 7 (Original): The drive unit as claimed in claim 6, wherein said engaging means is a cutout.

Claim 8 (Original): The drive unit as claimed in claim 6, wherein said engaging means has a drawn shape.

Claim 9 (Original): The drive unit as claimed in claim 1, wherein said drive pulley is formed so as to be press-fitted to said drive shaft.

Claim 10 (Original): The drive unit as claimed in claim 1, wherein said drive pulley is attached to said drive shaft at a position that is adjustable with respect to said drive shaft in a rotational direction thereof.

Claim 11 (Original): The drive unit as claimed in claim 1, wherein said drive pulley comprises at least one flange.

Claim 12 (Original): The drive unit as claimed in claim 11, wherein said flange comprises a gap.

Claim 13 (Original): The drive unit as claimed in claim 1, wherein said drive wire is held by at least one flange.

Claim 14 (Original): The drive unit as claimed in claim 1, wherein said drive pulley comprises:

a wire winding part around which said drive wire is wound; and
a groove provided to said wire winding part so as to hold said drive wire.

Claim 15 (Original): The drive unit as claimed in claim 1, wherein said drive pulley is formed of a steel plate.

Claim 16 (Original): The drive unit as claimed in claim 1, wherein said drive pulley is formed of a thin-plate material.

Claim 17 (Currently Amended): A drive unit comprising:
a drive shaft;
a drive pulley formed by press working and attached to said drive shaft; and
a drive wire driven by said drive pulley so as to move a movable body,
wherein said drive pulley is formed to be press-fitted to said drive shaft, said drive pulley including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable.

Claim 18 (Original): The drive unit as claimed in claim 17, wherein said drive pulley is attached to said drive shaft at a position that is adjustable with respect to said drive shaft in a rotational direction thereof.

Claim 19 (Original): A drive unit comprising:

a drive shaft;

a plurality of drive pulleys formed by press working and attached to said drive shaft;

and

a plurality of drive wires driven by said drive pulleys so as to move a movable body, wherein said drive pulleys are formed to be press-fitted to said drive shaft.

Claim 20 (Original): The drive unit as claimed in claim 19, wherein said drive pulleys are attached to said drive shaft at positions that are adjustable with respect to said drive shaft in a rotational direction thereof.

Claim 21 (Original): The drive unit as claimed in claim 20, wherein directions from which the positions are adjustable are equal.

Claim 22 (Currently Amended): A drive unit comprising:

a drive shaft;

a drive pulley formed by press working and attached to said drive shaft, said drive pulley including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an

elongation so that a position at which the pulley is attached to the draft shaft is adjustable;

and

a drive wire driven by said drive pulley so as to move a movable body,

wherein said drive pulley comprises at least one flange.

Claim 23 (Original): The drive unit as claimed in claim 22, wherein said flange comprises a gap.

Claim 24 (Original): The drive unit as claimed in claim 22, wherein said drive pulley comprises:

a wire winding part around which said drive wire is wound around; and

a groove provided to said wire winding part so as to hold said drive wire.

Claim 25 (Currently Amended): A method of producing a drive unit moving a movable body by a drive wire driven by a drive pulley attached to a drive shaft, which comprises:

fixing the drive pulley by press working or rolling, said drive pulley including a drum;

fixing an attachment member to said drum, said attachment member having an attachment strip fixed thereto which has at least one through hole formed therein for insertion of a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable.

Claim 26 (Original): The method as claimed in claim 25, wherein a cylindrical part and a fitting part of the drive pulley are formed in a single process, the cylindrical part having the drive wire wound therearound and the fitting part fitted to the drive shaft.

Claim 27 (Original): The method as claimed in claim 26, wherein centering is performed on the cylindrical part and the fitting part of the drive pulley in the single process.

Claim 28 (Original): The method as claimed in claim 26, wherein the cylindrical part and the fitting part of the drive pulley is integrally formed of one piece of sheet metal.

Claim 29 (Original): The method as claimed in claim 25, wherein the drive pulley is formed of a steel plate.

Claim 30 (Original): The method as claimed in claim 25, wherein the drive pulley is formed of a thin-plate material.

Claim 31 (Previously Presented): A running body moving unit moving a running body by a mechanism transmitting a driving force to the running body through wires wound around a plurality of drive pulleys attached to a drive shaft without slack,

wherein the drive shaft is provided with screw holes for fixing the drive pulleys to the drive shaft;

the drive pulleys are provided with a drum and an attachment member fixed to a surface of said drum, said attachment member having an attachment strip fixed thereto and having at least one hole through a fixing member is securable to the drive shaft, said through hole being spaced from said drum; and

said at least one attachment hole being formed to have an elongation so that a position at which a corresponding one of the drive pulleys is attached to the drive shaft is adjustable with respect to the drive shaft.

Claim 32 (Original): The running body moving unit as claimed in claim 31, wherein the one of the attachment holes has the elongation in a rotational direction of the drive shaft.

Claim 33 (Original): The running body moving unit as claimed in claim 31, wherein the position at which the corresponding one of the drive pulleys is attached to the drive shaft is adjustable in a rotational direction of the drive shaft.

Claim 34 (Original): The running body moving unit as claimed in claim 31, wherein one of the attachment holes is a fixing hole.

Claim 35 (Original): The running body moving unit as claimed in claim 31, wherein the attachment holes are loose holes.

Claim 36 (Original): The running body moving unit as claimed in claim 31, wherein the drive pulleys are formed of sheet metal by plastic working.

Claim 37 (Original): The running body moving unit as claimed in claim 36, wherein each of the drive pulleys comprises:

a fitting part fitted to the drive shaft; and

a cylindrical part around which a corresponding one of the wires is wound,

wherein said fitting part and said cylindrical part are formed integrally with each other.

Claim 38 (Previously Presented): An image reading apparatus comprising:
an optical system for scanning and reading an image;
a running body including said optical system; and
a running body moving unit moving said running body by a mechanism transmitting a driving force to said running body through wires wound around a plurality of drive pulleys attached to a drive shaft without slack,

wherein the drive shaft is provided with screw holes for fixing the drive pulleys to the drive shaft;

the drive pulleys are provided with a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto for insertion of a fixing member to secure said attachment member to said drive shaft, said drive pulleys including attachment holes through which fixing screws are passed to be screwed into the screw holes and

at least one of the attachment holes is formed to have an elongation so that a position at which a corresponding one of the drive pulleys is attached to the drive shaft is adjustable with respect to the drive shaft.

Claim 39 (Original): The image reading apparatus as claimed in claim 38, wherein the one of the attachment holes has the elongation in a rotational direction of the drive shaft.

Claim 40 (Original): The image reading apparatus as claimed in claim 38, wherein the position at which the corresponding one of the drive pulleys is attached to the drive shaft is adjustable in a rotational direction of the drive shaft.

Claim 41 (Original): The image reading apparatus as claimed in claim 38, wherein one of the attachment holes is a fixing hole.

Claim 42 (Original): The image reading apparatus as claimed in claim 38, wherein the attachment holes are loose holes.

Claim 43 (Original): The image reading apparatus as claimed in claim 38, wherein the drive pulleys are formed of sheet metal by plastic working.

Claim 44 (Original): The image reading apparatus as claimed in claim 43, wherein each of the drive pulleys comprises:

- a fitting part fitted to the drive shaft; and
- a cylindrical part around which a corresponding one of the wires is wound,

wherein said fitting part and said cylindrical part are formed integrally with each other.

Claim 45 (Currently Amended): An image reading apparatus comprising:

- an optical system for scanning and reading an image;
- a running body including said optical system; and
- a drive unit,

the drive unit comprising:

a drive shaft;

a drive pulley attached to said drive shaft; and

a drive wire driven by said drive pulley so as to move the running body,

wherein said drive pulley is formed by press working or rolling, said drive pulley including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable.[[.]]

Claim 46 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley comprises a hole through which said drive wire is passed.

Claim 47 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley comprises an engaging part that engages and holds said drive wire.

Claim 48 (Original): The image reading apparatus as claimed in claim 47, wherein said engaging part is a cutout.

Claim 49 (Original): The image reading apparatus as claimed in claim 47, wherein said engaging part has a drawn shape.

Claim 50 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley comprises engaging means for engaging and holding said drive wire.

Claim 51 (Original): The image reading apparatus as claimed in claim 50, wherein said engaging means is a cutout.

Claim 52 (Original): The image reading apparatus as claimed in claim 50, wherein said engaging means has a drawn shape.

Claim 53 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley is formed so as to be press-fitted to said drive shaft.

Claim 54 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley is attached to said drive shaft at a position that is adjustable with respect to said drive shaft in a rotational direction thereof.

Claim 55 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley comprises at least one flange.

Claim 56 (Original): The image reading apparatus as claimed in claim 55, wherein said flange comprises a gap.

Claim 57 (Original): The image reading apparatus as claimed in claim 45, wherein said drive wire is held by at least one flange.

Claim 58 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley comprises:

a wire winding part around which said drive wire is wound around; and

a groove provided to said wire winding part so as to hold said drive wire.

Claim 59 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley is formed of a steel plate.

Claim 60 (Original): The image reading apparatus as claimed in claim 45, wherein said drive pulley is formed of a thin-plate material.

Claim 61 (Currently Amended): An imaging apparatus comprising:

an image reading apparatus,

the image reading apparatus comprising:

an optical system for scanning and reading an image;

a running body including said optical system; and

a running body moving unit moving said running body by a mechanism

transmitting a driving force to said running body through wires wound around a

plurality of drive pulleys attached to a drive shaft without slack,

wherein the drive shaft is provided with screw holes for fixing the drive pulleys to the drive shaft;

the drive pulleys including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable;
and

said at least one of the attachment hole is formed to have an elongation so that a position at which a corresponding one of the drive pulleys is attached to the drive shaft is adjustable with respect to the drive shaft.

Claim 62 (Original): The imaging apparatus as claimed in claim 61, wherein the one of the attachment holes has the elongation in a rotational direction of the drive shaft.

Claim 63 (Original): The imaging apparatus as claimed in claim 61, wherein the position at which the corresponding one of the drive pulleys is attached to the drive shaft is adjustable in a rotational direction of the drive shaft.

Claim 64 (Original): The imaging apparatus as claimed in claim 61, wherein one of the attachment holes is a fixing hole.

Claim 65 (Original): The imaging apparatus as claimed in claim 61, wherein the attachment holes are loose holes.

Claim 66 (Original): The imaging apparatus as claimed in claim 61, wherein the drive pulleys are formed of sheet metal by plastic working.

Claim 67 (Original): The imaging apparatus as claimed in claim 66, wherein each of the drive pulleys comprises:

a fitting part fitted to the drive shaft; and

a cylindrical part around which a corresponding one of the wires is wound,

wherein said fitting part and said cylindrical part are formed integrally with each other.

Claim 68 (Currently Amended): An imaging apparatus comprising:

an image reading apparatus,

the image reading apparatus comprising:

an optical system for scanning and reading an image;

a running body including said optical system; and

a drive unit,

the drive unit comprising:

a drive shaft;

a drive pulley attached to said drive shaft; and

a drive wire driven by said drive pulley so as to move the running body,

wherein said drive pulley is formed by press working or rolling, said drive pulley including a drum and an attachment member fixed to said drum, said attachment member having an attachment strip fixed thereto and having at least one through hole formed therein for inserting a fixing member to secure said attachment member to said drive shaft, said at least one through hole of said attachment strip being formed so as to have an elongation so that a position at which the pulley is attached to the draft shaft is adjustable.

Claim 69 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley comprises a hole through which said drive wire is passed.

Claim 70 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley comprises an engaging part that engages and holds said drive wire.

Claim 71 (Original): The imaging apparatus as claimed in claim 70, wherein said engaging part is a cutout.

Claim 72 (Original): The imaging apparatus as claimed in claim 70, wherein said engaging part has a drawn shape. .

Claim 73 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley comprises engaging means for engaging and holding said drive wire.

Claim 74 (Original): The imaging apparatus as claimed in claim 73, wherein said engaging means is a cutout.

Claim 75 (Original): The imaging apparatus as claimed in claim 73, wherein said engaging means has a drawn shape.

Claim 76 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley is formed so as to be fitted to said drive shaft by pressure.

Claim 77 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley is attached to said drive shaft at a position that is adjustable with respect to said drive shaft in a rotational direction thereof.

Claim 78 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley comprises at least one flange.

Claim 79 (Original): The imaging apparatus as claimed in claim 78, wherein said flange comprises a gap.

Claim 80 (Original): The imaging apparatus as claimed in claim 68, wherein said drive wire is held by at least one flange.

Claim 81 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley comprises:

a wire winding part around which said drive wire is wound around; and
a groove provided to said wire winding part so as to hold said drive wire.

Claim 82 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley is formed of a steel plate.

Claim 83 (Original): The imaging apparatus as claimed in claim 68, wherein said drive pulley is formed of a thin-plate material.